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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,437

02/17/2004

Ming-Ren Lian

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10/18/2005

IP LEGAL DEPARTMENT
TYCO FIRE & SECURITY SERVICES
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EXAMINER

STONE, JENNIFER A

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/780,437

Applicant(s)

LIAN ET AL.

Examiner

Jennifer A. Stone

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/21/05; 2/17/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the wrong set of drawings were submitted with the application. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

2. Claim 21 is objected to because of the following informalities: "an second", line 2 should be changed to "a second". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 28 recites the limitation "said receiver" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Herman (US 5,065,137).

Herman discloses a system comprising: a transmitter to transmit an interrogation signal operating at a first frequency (Fig. 7, item 90); a security tag having a frequency-dividing marker comprising a pair of overlapping resonant circuits (Fig. 7, item 91), with a first resonant circuit to generate a first resonant signal in response to said interrogation signal, and a second resonant circuit to receive said first resonant signal and generate a second resonant signal having a second resonant frequency in response to said first resonant signal (col 7, lns 3-21); and a detector to detect said second resonant signal from said marker and generate a detection signal in accordance with said second resonant signal (Fig. 7, items 91, 92).

7. Claims 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Herman (US 5,065,137).

For claim 29, Herman discloses a method comprising: receiving an interrogation signal at a first resonant circuit for a marker (Fig. 7, items 94, 96; col 7, lns 8-10); generating a first resonant signal having a first resonant frequency in response to the interrogation signal (col 1, lns 8-10; col 2, lns 4-6); receiving said first resonant signal at a second resonant circuit overlapping said first resonant circuit (col 2, lns 25-30; col 3, lns 39-41 and 50-54); and generating a second resonant signal having a second resonant frequency in response to said first resonant signal (col 2, lns 6-14), with said resonant frequency being different from said first resonant frequency (col 3, lns 3-8).

For claim 30, Herman discloses said second resonant frequency is less than said first resonant frequency (col 3, Ins 3-8).

For claim 31, Herman discloses said second resonant frequency is approximately half of said first resonant frequency (col 3, Ins 3-8).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman (US 5,065,137) and further in view of Eckstein et al. (US 6,894,614).

For claim 1, Herman discloses a marker, comprising: a first resonant circuit comprising a first coil having a pair of terminals and a capacitor connected to said pair of terminals (Fig. 1, items C1, L1; col 2, Ins 62-66), said resonant circuit to generate a first resonant signal in response to an interrogation signal (Fig. 7, item 94; col 7, Ins 8-10) and a second resonant circuit comprising a second coil having a pair of terminals and a non-linear capacitor connected to said pair of terminals (Fig. 1, items C2, L2; col 2, Ins 66-68; col 3, Ins 1, 2), with a portion of said second coil to overlap a portion of said first coil said second resonant circuit to receive said first resonant signal (col 3, Ins 40-59) and generate a second resonant signal having a second resonant frequency (col

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7, Ins 3-21). Herman does not disclose planarized coils, however, Eckstein discloses this feature (col 6, Ins 2-10 and 30-34). It would have been obvious to one of ordinary skill in the art, at the time the invention was made to design planarized coils to meet specific design criteria, such as flat markers.

For claim 2, the amount of overlap corresponds to an amount of mutual coupling k between fields generated by said coils (Fig. 6; col 6, Ins 40-50).

For claim 3, the value for k comprises approximately 0.3 (col 3, Ins 50-59).

For claim 4, said non-linear capacitor comprises one of a zener diode, a varactor, and metal-oxide semiconductor capacitor (col 2, Ins 66-68; Fig. 1, D2).

For claim 5, said non-linear capacitor operates as a voltage dependent variable capacitor (col 4, Ins 14-28).

For claim 6, Herman discloses said second resonant frequency is less than said first resonant frequency (col 3, Ins 3-8).

For claim 7, Herman discloses said second resonant frequency is approximately half of said first resonant frequency (col 3, Ins 3-8).

For claim 8, Herman discloses an interrogation signal (Fig. 7, item 94), but does not quantify the signal. Eckstein discloses an interrogation signal that operates at approximately 13.56 Megahertz (col 2, Ins 13-16; Fig. 1, item 12; col 5, Ins 3-10). It would have been obvious to operate the carrier frequency at a standard bandwidth of 13.56 MHz in order to conform to a bandwidth assigned by the International Telecommunications Union to ensure communication with a minimal amount of noise.

For claim 9, Herman discloses first and second different resonant frequencies; however, Herman does not quantify the frequencies (col 3, Ins 3-8). Eckstein, on the other hand, does quantify first and second frequencies as being approximately 13.56 MHz and approximately 6.78 MHz, respectively (col 6, Ins 19-22). It would have been obvious to operate the first and second frequencies at a standard bandwidth of 13.56 MHz and approximately 6.78 MHz in order to conform to bandwidths assigned by the International Telecommunications Union to ensure communication with a minimal amount of noise.

10. Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman (US 5,065,137) and further in view of Eckstein et al. (US 6,894,614).

For claim 10, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 1 as stated above. Herman discloses numerous configurations between the circuits and the coils. Even though Herman does not disclose the second resonant circuit positioned within said first planarized coil, it would have been obvious to design a compact circuit in order to meet specific design criteria, such as small markers (col 1, Ins 66-68).

For claims 11-18, the claims are interpreted and rejected for the same reasons as stated in the rejection of claims 2-9, respectively.

10. Claims 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman (US 5,065,137) and further in view of Eckstein et al. (US 6,894,614).

For claim 20, Herman discloses the first resonant circuit comprises; a first inductor comprising a first coil having a pair of terminals; and a capacitor connected to

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said pair of terminals (Fig. 1, items C1, L1; col, Ins 62-66). Herman does not disclose a planarized coil, however, Eckstein discloses this feature (col 6, Ins 2-10 and 30-34). It would have been obvious to one of ordinary skill in the art, at the time the invention was made to design a planarized coil to meet specific design criteria, such as flat markers.

For claim 21, Herman discloses said second resonant circuit comprises: a second inductor comprising a second coil having a pair of terminals; and a non-linear capacitor connected to said pair of terminals (col 2, Ins 66-68; col 3, Ins 1,2; Fig. 1, items L2, D2). Herman does not disclose a planarized coil, however, Eckstein discloses this feature (col 6, Ins 2-10 and 30-34). It would have been obvious to one of ordinary skill in the art, at the time the invention was made to design a planarized coil to meet specific design criteria, such as flat markers.

For claim 22, said second coil overlaps said first coil to create a mutual coupling k between fields generated by said coils (col 3, Ins 49-59). In addition, the claim is interpreted and rejected for the same reasons as stated in the rejection of claims 20 and 21, as stated above regarding the planarized coils.

For claim 23, a value for k comprises approximately 0.3 (col 3, Ins 58, 59).

For claim 24, Herman discloses numerous configurations between the circuits and the coils. Even though Herman does not disclose the second resonant circuit positioned within said first planarized coil, it would have been obvious to design a compact circuit in order to meet specific design criteria, such as small markers (col 1, Ins 66-68).

For claim 25, the value for k comprises approximately 0.3 (col 3, Ins 50-59).

Claims 26 and 27 are interpreted and rejected for the same reasons as stated in the rejection of claims 8 and 9, respectively.

For claim 28, Herman discloses a receiver to receive a detection signal; however, the receiver does not generate an alarm signal in response to the detection signal. Eckstein, on the other hand, discloses an alarm system to connect to a receiver, said alarm system to receive said detection signal and generate an alarm signal in response to said detection signal (col 9, Ins 38-50; Fig. 7, item 114; Fig. 1, items 46, 48). It would have been obvious to include an alarm signal generated by the receiver so that security personnel are alerted when a tag is within a detected area.

11. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman (US 5,065,137) and further in view of Eckstein et al. (US 6,894,614).

The claims are interpreted and rejected for the same reasons as stated in the rejection of claims 8 and 9, respectively.

12. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman (US 5,065,137) and further in view of Eckstein et al. (US 6,894,614).

For claim 34, Herman discloses a marker comprising: a resonant circuit comprising a coil having a pair of terminals and a non-linear capacitor connected to said pair of terminals, said resonant circuit to receive an interrogation signal and generate a resonant signal in response to said interrogation signal (Fig. 1; Fig. 7, items 90, 94; col 2, Ins 62-68; col 3, Ins 1-20; col 7, Ins 8-10). However, Herman discloses neither a planarized coil nor a quantified interrogation signal. Eckstein, however, discloses both of these features (col 6, Ins 19-23; 30-34; Fig. 3). It would have been obvious to one of

ordinary skill in the art, at the time the invention was made to design planarized coils to meet specific design criteria, such as flat markers. In addition, it would have been obvious to operate the carrier frequency at a standard bandwidth of 13.56 MHz in order to conform to a bandwidth assigned by the International Telecommunications Union to ensure communication with a minimal amount of noise.

For claim 35, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 4 as stated above.

For claim 36, the claim is interpreted and rejected for the same reasons as stated in the rejection of claim 5 as stated above.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Grabner (US 6,674,365) discloses two resonant circuits that include a capacitor for each circuit which use a common antenna for a communication terminal.

Kajfez et al. (US 5,510,769) discloses an EAS interrogator that includes a first inductor coil positioned on a substrate that overlaps a second inductor coil.

Cole (US 6,172,608) discloses a transponder system that includes electromagnetic non-coupling with an interrogator antenna and a label antenna.

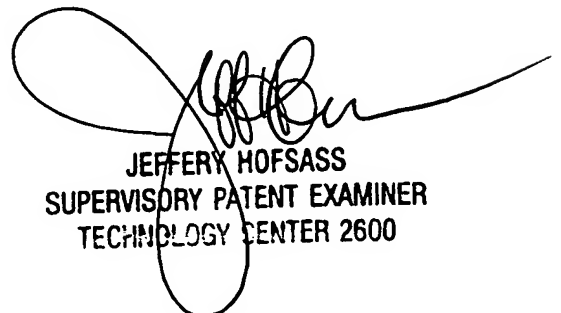
Lauro et al. (US 5,604,485) discloses a plurality of non-planar RF resonant circuits for an EAS interrogation system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Stone whose telephone number is (571) 272.2976. The examiner can normally be reached on M-F from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass, can be reached at (571) 272.2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Stone
October 13, 2005



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